

TABLE 3.—Maximum free-air wind velocities (m. p. s.) for different sections of the United States, based on pilot-balloon observations during March 1944

Section	Surface to 2,500 meters (m. s. l.)					Above 2,500 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m) m. s. l.	Date	Station
Northeast ¹	43.2	WSW...	2,085	8	New York, N. Y....	50.4	WNW...	4,432	26	Portland, Maine....	73.6	NW....	10,640	14	Mount Washington, N. H.
East-Central ²	40.8	WSW...	2,437	8	Hatteras, N. C.....	66.0	WNW...	4,438	8	Chattanooga, Tenn.	74.0	WSW...	11,324	24	Washington, D. C.
Southeast ³	35.6	SW....	1,908	19	Birmingham, Ala....	54.4	WSW...	5,000	7	Atlanta, Ga.....	60.2	WSW...	5,244	7	Atlanta, Ga.
North-Central ⁴	38.6	W....	730	6	Milwaukee, Wis.....	45.9	W....	5,000	10	Williston, N. Dak....	60.8	W....	7,695	28	Sault Ste. Marie, Mich.
Central ⁵	43.4	NW....	951	6	Sioux City, Iowa....	46.0	NW....	4,024	8	Omaha, Nebr.....	56.8	WNW...	9,715	4	Wichita, Kans.
South-Central ⁶	40.0	WSW...	1,253	4	Memphis, Tenn.....	44.5	NNE...	2,518	8	Little Rock, Ark....	64.0	W....	10,142	30	Brownsville, Tex.
Northwest ⁷	40.6	WNW...	1,881	10	Ellensburg, Wash....	64.2	W....	4,221	23	Ellensburg, Wash....	84.0	N....	6,711	13	Medford, Oreg.
West-Central ⁸	37.4	W....	2,489	23	Cheyenne, Wyo.....	59.3	N....	5,000	13	Redding, Calif.....	69.0	N....	6,514	13	Redding, Calif.
Southwest ⁹	37.0	W....	2,098	5	Roswell, N. Mex.....	50.8	SSE...	4,953	2	Las Vegas, Nev.....	67.0	SW....	9,545	2	Albuquerque, N. Mex.

¹ Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

² Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.

³ South Carolina, Georgia, Florida, and Alabama.

⁴ Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.

⁵ Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

⁶ Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.

⁷ Montana, Idaho, Washington, and Oregon.

⁸ Wyoming, Colorado, Utah, northern Nevada, and northern California.

⁹ Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By C. R. JORDAN

PRECIPITATION during March was abnormally heavy from the Rocky Mountains eastward, except in a few relatively small areas. Amounts were unusually heavy in the Atlantic area, especially in southern sections, the Central and East Gulf and central Rocky Mountain States, and in a belt extending from central Kansas and northern Oklahoma northeastward to the Lakes region. Southeastern South Carolina and Georgia received three times the March normals. Amounts were considerably below normal in the Southwest, especially western Texas and eastern New Mexico, and also in the Pacific States.

The southern edge of the snow cover retreated considerably during March and by the end of the month most ground in the United States was bare of snow. The ground was still covered in northern New England, the northern Lakes region and over most of Wisconsin and North Dakota. Considerable depths also remained in the higher elevations of the West.

Stream flow continued high in the Southeast and in the South Central States and was above normal over the eastern half of the country with the exception of New England and northern Michigan and Wisconsin. Stream flow continued sub-normal throughout the West except in Nevada and western Arizona. Floods in the southeastern States were the only overflow of consequence in the United States during the month and, in fact, since October 1943. In response to heavy rainfall late in February and frequently during March, especially during the latter part of the month, more-than-seasonal rises in stream flow occurred in an area extending from eastern Texas and Kansas to Virginia. Flood records of 50-years standing were broken in the Tombigbee River Basin in Mississippi, many long-standing deficiencies in reservoir storage, especially in Oklahoma, were made up during the month and light flooding occurred at scattered points throughout the country, east of the Divide.

Atlantic Slope Drainage.—Moderate rain near the middle of March combined with some snow melt produced a rise in the headwater tributaries of the Susquehanna River and bankful stages were reached and exceeded slightly at a number of locations north of the Pennsylvania line. Bankful stages were also approached but not reached in

the North and West Branches of the Susquehanna in Pennsylvania.

Moderate to heavy rainfall late in February and frequently during March caused a succession of rises in the Atlantic coastal streams from Virginia to southern Georgia, and light to moderate flooding occurred at intervals on all streams. No long time records for the area were broken. A number of crests were recorded at the upstream stations but the rainfall occurred at such intervals that runoff from previous rains on the larger streams had not been dissipated before the effect of later rains was felt and the slowly acting coastal-plain streams remained at fairly high stages throughout most of March. The monthly discharge of most streams in the area was unusually high. It has been estimated that damage amounting to \$350,000 resulted from the floods.

East Gulf of Mexico Drainage.—Heavy rains late in February caused most Gulf streams from western Georgia to the Mississippi River to exceed flood stages during the first few days of March. Thereafter, until about March 20, stages were generally falling. Heavy rains again fell over the area during the period March 20–23, and the effect of this storm had not passed by March 27, when heavy rainfall was again reported, with 3-day amounts of 8 inches or over in some sections. No maximum known stages were exceeded in Alabama but runoff was so well distributed throughout the month and over the State that monthly runoff for the State as a whole was one of the largest of record for any one month.

In the Tombigbee River Basin in northeast Mississippi, stages on the main stream and on some of the tributaries exceeded all recorded stages and in one instance at least, Buttahatchie River near Caledonia, Miss., the crest of the historic flood of 1892 was exceeded.

Severe flood stages were reached in the Pearl River in central and south central Mississippi. Greatest damage occurred in the Jackson area where the river rose 16.2 feet above flood stage. The flood continued into April.

Property damage was severe especially in the Tombigbee Basin. It was reported that 70 county bridges in Itawamba County alone were washed out. Damage was high both to crops already planted and as a result of the delay in planting caused by overflowed farm lands. Highway transportation was disrupted completely in some parts of the State and hundreds of people were evacuated from their homes. Several deaths are known

to have resulted from the flood. Many streams were still rising at the end of March and most of the flooding continued into April. No estimate of the damage sustained can be made at this time.

Upper Mississippi Basin.—Moderate to excessive rains occurred on March 13, 14, and 15, over southeastern Iowa and west-central Illinois, with a few heavy local rains over the upper portions of the Rock River Basin, with local amounts exceeding 3 inches. The Rock River was above flood most of the latter half of March but loss during the flood was comparatively small. There was a small amount of damage resulting from washing and from flooded cellars and lowlands and from suspension of business. Total loss is estimated at \$1,500. Rains of "cloudburst" proportions were reported in the vicinity of Darlington, Wis., on March 14, that rapidly transformed the Pecatonica River into a raging torrent that produced considerable overflow from Darlington to Gratiot, Wis.

Moderate rains beginning about the middle of March caused the Illinois River to rise to stages a little above bankful beginning in the upper portion on the 16th and continuing above flood stage at downstream stations at the end of the month. The crests during March did not exceed flood stage seriously and little damage resulted. The Mississippi River at Grafton, Ill., was 0.3 foot above flood stage on the 20th and 21st.

Missouri Basin.—Ice jams and flooding were reported in southeastern Montana during the latter part of March. Ice moved out of the Tongue, Powder, and Little Missouri Rivers and resulted in ice jams in the Yellowstone River at Miles City, Crane, and Fairview. Considerable damage from flooding was reported at Miles City. The situation at Miles City was relieved late on the afternoon of March 21 when an Army Flying Fortress dropped sixteen 250-pound bombs along the 5-mile gorge below the city. The stage of the water above the jam dropped from 21.7 feet on March 21 to 6.3 feet on the 22d. Light flooding of the lowest lands along the Missouri River occurred from Sanish, N. Dak., westward to the Montana line. A resident of the bottom lands near Sanish lost cattle and hay valued at about \$2,000 on March 26, when his land was overflowed by floodwaters of the Missouri.

Heavy rains about the middle of March caused light flooding along portions of the Osage River. Stages were only slightly above flood stage and little damage resulted. It is estimated that \$1,500 damage resulted from the overflow, representing for the most part damage to growing wheat.

Ohio Basin.—Light flooding occurred during March at widely scattered points in the tributary streams of the Ohio River Basin and in the Ohio itself from Tell City, Ind., to the mouth of the river near the close of the month. Damage was light. The lower portion of the Ohio remained above flood stage at the end of the month.

Arkansas and Red Basins.—Flood stages were reached at a few locations along the tributaries of the Arkansas and Red Rivers. Overflow was not great in any instance and losses were comparatively light. Losses are estimated at \$75,000 and occurred principally in the Neosho, Ouachita, Verdigris, and Walnut River Basins.

Lower Mississippi Basin.—Flood stages were exceeded slightly at Rossville, Tenn., on the Wolf River and at Swan Lake, Miss., on the Tallahatchie River. No material damage resulted. The Tallahatchie, Yazoo, and the Mississippi Rivers reached flood stage at several stations during the last few days of March and remained above flood at the close of the month.

West Gulf of Mexico Drainage.—Heavy rains near the

end of February over northern and eastern Texas produced light flooding along the Sabine, Elm Fork, East Fork, and Trinity Rivers during the early part of March. No damage of consequence resulted from these overflows.

Heavy rains fell over the Calcasieu River, Bayou des Cannes, Bayou Nezpique, and Bayou Vermillion watersheds on March 18–19. Streams rose rapidly but flood stage was exceeded only at Basile, La., on the Bayou Nezpique. No damage resulted.

Generally heavy rains fell over the area comprising Harrison, Upshur, Gregg, Rusk, Panola, Nacogdoches, and Shelby Counties of Texas on March 28. Small streams in the area flooded causing an estimated loss of \$25,000 to livestock, \$30,000 damages to highways, bridges, and fences; destroyed approximately 2,000 acres of truck crops valued at \$20,000; and delayed the planting of corn and other crops for several weeks. The greatest damage occurred in Panola County. At least one man was drowned in Panola County while attempting to rescue cattle from the flood waters.

The Guadalupe River was slightly above flood stage at Victoria, Tex., on March 19. No losses were reported.

FLOOD-STAGE REPORT FOR MARCH 1944

[All dates in March unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest 1	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Erie	Feet			Feet	
St. Joseph: Fort Wayne, Ind.....	12	17	17	12.1	17
ATLANTIC SLOPE DRAINAGE					
Chenango:					
Sherburne, N. Y.....	8	{ 17	18	9.3	17
		{ 24	28	8.9	25
Greene, N. Y.....	8	{ 17	18	12.3	17
		{ 25	27	9.0	26
Susquehanna:					
Oneonta, N. Y.....	12	16	19	16.6	17
Unadilla, N. Y.....	11	18	18	11.5	18
Bainbridge, N. Y.....	12	17	18	15.7	17
Vestal, N. Y.....	14	{ 14	19	19.9	18
		{ 24	28	16.1	27
Roanoke:					
Weldon, N. C.....	31	{ 8	10	34.8	9
		{ 14	15	33.2	15
		{ 31	(?)		
Williamston, N. C.....	10	(?)	(?)	11.3	20
Tar:					
Rocky Mount, N. C.....	9	22	22	9.1	22
Tarboro, N. C.....	18	22	26	20.5	24
Greenville, N. C.....	13	21	28	15.6	25
Neuse:					
Neuse, N. C.....	14	{ 14	15	14.2	14
		{ 20	23	16.0	21
		{ 8	10	14.2	9
Smithfield, N. C.....	13	{ 14	17	15.8	15-16
		{ 20	26	19.0	22
Goldsboro, N. C.....	14	10	(?)	20.9	27
Kinston, N. C.....	14	{ (?)	1	15.1	Feb. 28
		{ 13	(?)	15.2	16
				17.8	30
Cape Fear:					
Fayetteville, N. C.....	35	{ 14	15	37.2	14
		{ 21	24	42.5	22
		{ 8	11	24.3	9
Lock No. 2, Elizabethtown, N. C.	22	{ 13	18	27.3	15
		{ 21	27	30.3	23
		{ 31	(?)		
Lynch: Effingham, S. C.....	14	25	29	16.3	27
				7.3	9
Waccamaw: Conway, S. C.....	7	8	Apr. 5	7.4	15-18
Pee Dee:				7.5	24-26, 30, 3
		{ 14	14	31.0	14
		{ 20	24	38.6	21
Cheraw, S. C.....	30	{ 30	Apr. 1	34.0	30
		{ Feb. 14	4	19.0	Feb. 21
				18.4	1-2
Mars Bluff Bridge, S. C.....	17	{ 10	Apr. 9	18.0	12
				19.3	18
				22.1	27
Saluda:				20.3	Apr. 4
		{ 7	7	6.0	7
Pelzer, S. C.....	6	{ 19	24	10.1	20
		{ 29	Apr. 2	10.0	30
		{ 20	24	24.8	20
Chapells, S. C.....	13	{ 29	Apr. 3	22.3	23
				18.1	30

See footnotes at end of table.